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WHAT IS CLAIMED IS:

~~Patent Claim~~

~~1.~~ A method for verifying the safety properties of Java byte code programs in accordance with the principle of byte code verification, characterized in that

a) using an algorithm describing the properties of byte code instructions, the method of functioning of the byte code program to be verified is mapped by a potentially infinite state transition system onto a finite state transition system (M), and the state space of the interpreter (JVM) is mapped onto a finite set of states in the finite state transition system (M), all information not needed for the acceptability of the byte code program to be checked being omitted, so that the resulting finite state transition system (M) exclusively contains type information, which is used to verify the acceptability of the byte code program and which is entered into a model checker; that

b) the properties which characterize an acceptable byte code program are acquired in a logic operation in the form of formulas and are entered as conditional set (S) into the model checker, the model checker interpreting each individual condition (s) of the conditional set (S) as a specification language for the system properties of byte code programs, and that

for each condition (s) of the conditional set (S), the model checker verifies whether it is fulfilled by the state transition system (M), and that the verified byte code program is automatically released for further processing when the state transition system (M) fulfills all conditions (s) of conditional set (S).

add

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